

STATUS OF SITE EMERGING PROJECTS

Solici - tation	Developer	Technology	Project Manager	Status	Reports
Completed Biological Projects					
E03	ABB Environmental Services, Inc. Wakefield MA Jay Johnson 617-245-6606	In-situ Biological Treatment for Chlorinated Solvents in Soils	Ronald Lewis 513-569-7856	Project completed 1993.	Bulletin published August 1995. (EPA/540/F-95/510) Final report being reviewed.
E07	ABB Environmental Wakefield, MA Dan Groher 617-245-6606	Anaerobic/ Aerobic Sequential Bioremediation of PCE	Ronald Lewis 513-569-7856	Field work completed April 1998.	Paper was presented at Battelle Conference May 18-21, 1998.
E01*	Bio-Recovery Systems, Inc. Las Cruces NM Mike Hosea 505-523-0405 800-697-2001	Biological Sorption of Metal-Ions from Ground Water	Ronald Lewis 513-569-7856	Project completed 1990 Developer moved to the SITE Demonstration Program.	Report (EPA/540/5- 90/005a&b) Bulletin (EPA/540/F-92/003) Summary (EPA/540/S5-90/005) Journal article JAWMA Vol. 41, No. 10, 10/91
E03	Biotrol, Inc. Eden Prairie MN Durrell Dobbins 612-942-8032	Bacterial Oxidation of Chlor-Aliphatics in Groundwater	David Smith 303-293-1475	Project completed 1992.	Project summary EPA/540/S-93/505. Bulletin EPA/540/F-93/506 Journal article JAWMA Vol. 43, No 11, 11/93
E05	COGNIS, Inc. Santa Rosa CA Ron Wilson 707-576-6231	Coupled Metal Extraction/ Bio-remediation	Steve Rock 513-569-7149	Project completed 1995.	Final report sent to NTIS.
E01*	Colorado School of Mines Golden CO Dr. Thomas Wildeman 303-273-3642	Wetland-Based Treatment for Mineral Mine Drainage	Edward Bates 513-569-7774	Emerging project completed 1991. Technology accepted into SITE Demonstration Program under the Colorado Dept. Of Health.	Final report for NTIS only (EPA/540R-93/523) Bulletin (EPA/540/F-92/001) Summary (EPA/540/SR-93/523).
E06	Environmental Biotech San Carlos CA Douglas Munnecke 415-596-1015	Microbial Composting Process for Manufacturing Town Gas Wastes	Ronald Lewis 513-569-7856	Research completed 1996.	Draft final report being reviewed.

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Solici- tation	Developer	Technology	Project Manager	Status	Reports
Completed Biological Projects (continued)					
E04	Groundwater Technology Government Services Concord CA Dr. Ronald Hicks 510-671-2387	Biological Composting of Cyclodiene Pesticides Chlordane & Heptachlor	Ronald Lewis 513-569-7856		Draft final report, project summary and bulletin being reviewed.
E04*	Institute of Gas Technology Chicago IL Dr. Robert Kelley 708-768-0722	Integrated Chemical & Biological Treatment	Ronald Lewis 513-569-7856	Project completed 1993. Developer will start Demonstration Program with Retech at Utica spring 1995.	Emerging Technology summary received. Bulletin (EPA/540/F-94/504) Journal article submitted.
E03*	Institute of Gas Technology Chicago IL Dr. Robert Kelley 708-768-0722	Fluid Extraction Biological Degradation of Organic Wastes	Valdis Kukainis 513-569-7955	Project completed 1992. Invited into Demo Program.	Bulletin (EPA/540/F-94/501)
E06	IT Corp. Knoxville TN Kandi Brown 909-799-6869	Innovative Methods for Bioslurry Treatment	Valdis Kukainis 513-569-7955	Project completed 1995.	Final Report PB97-176820 Summary (EPA/540/SR-96/505)
E03*	J.R. Simplot Co. Pocatello ID Dane Higdem 208-234-5367	Anaerobic Biological Destruction of Nitroaromatics in Soil and Sludge.	Wendy Davis-Hoover 513-569-7206	Project completed 1993. Developer has now successfully demonstrated the technology for Dinoseb and TNT in the field.	Journal article for Applied and Environmental Microbiology 58:1683-1689
E03*	Media & Process Technology (formerly Alcoa and Aluminum Co. Of America) Pittsburgh PA Paul K.T. Liu 412-826-3711	Biological Scrubber for Removing Organic Emissions	Paul dePercin 513-569-7797	Project completed 1993.	Report (EPA/540/R-93/521) Bulletin EPA/540/F-93/507) Summary (EPA/540/SR-93-521) Journal article A&W Vol. 44, 3/94 pp. 299-303.

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Solici - tation	Developer	Technology	Project Manager	Status	Reports
Completed Biological Projects (continued)					
E04	New Jersey Institute of Technology Hazardous Substances Mgmt. Res. Center Newark NJ John Schuring 973-596-5849	Integrated Pneumatic Fracturing Bioremediation for in-situ Treatment of Contaminated Soil	Randy Parker 513-569-7271	Field pilot study was completed 1994. Final sampling and data analysis were completed March 1995.	Journal article cleared October, 1995 & submitted to JAWMA.
E05	OHM Corporation Findlay OH Douglas E. Jerger 419-423-3526	In-situ Bioremediation Using Oxygen Microbubbles	Ronald Lewis 513-569-7856	Draft bulletin received.	Paper was presented at Battelle Conference May 18-21, 1998.
E08	Phytokinetics Inc. North Logan UT Dr. Ari Ferro 801-750-0985	Phytoremediation of PCP and PAHs	Steve Rock 513-569-7149	Field work complete.	Journal article submitted to Journal of Soil Contamination.
E08	Pintail Systems Inc. Aurora, CO Leslie Thompson 303-367-8443	Immobilization & Remineralization of Metals in Soils Spent in Ores and Waters.	Ronald Lewis 513-569-7856	Work completed.	Draft bulletin received, final report being prepared.
E05	Remediation Technologies, Inc. Seattle WA Dr. Hans Stroo 206-624-9349	Gas-phase Biofilter for Chlorinated VOCs	Ronald Lewis 513-569-7856	Project Completed 1995.	Draft final report being reviewed.
Ongoing Biological Projects					
E08	Electrokinetics, Inc. Baton Rouge, LA Elif Acar 504-753-8004	In-Situ Bioremediation by electrokinetic Injection	Randy Parker 513-569-7271	Project completed 1999.	Draft final report received, currently under review.

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Solici - tation	Developer	Technology	Project Manager	Status	Reports
Completed Materials/Handling Projects					
E03	Montana College of Mineral Science and Technology Butte MT Theodore Jordan 406-496-4112	Recovery of Metal Values and Toxins from Mine Wastes	Ed Bates 513-569-7774	Testing complete.	Paper submitted for publication by AW&WM.
E03	Montana College of Mineral Science and Technology Butte MT Gordon Ziesing 406-494-1473	Recovery of Heavy Metals from Wastes with a Centrifugal Jig	Jack Hubbard 513-569-7507	Initial screening tests have been conducted.	A final report has been received.
E04	National Environmental Technology Centre (formerly WarrenSpring Laboratory) Culham, England Peter Wood 01- 44-235-46-319	Physical Processing Techniques for Treatment of Contaminated Soils	Mary Stinson 732-321-6683	All work by the developer is completed.	Due to lack of reports, developer has been exited from the Program.
E07	Thermo Nutech (Was TMA Eberline/ ThermoAnalyt- ical Albuquerque, NM Jeff Brown 423-481-0683	Segmented Gate System for Soil w/radionuclides	Vicente Gallardo 513-569-7176	Field test in Ashtabula OH has been completed.	
E03	University of South Carolina Columbia SC Frank Caruccio 803-777-4512	Abatement of Acid Mine Drainage Through Site Surface Reconstruction	Roger Wilmoth 513-569-7509	All field work is finished, project marginally successful.	Journal article was rejected, article being revised for resubmission.

STATUS OF SITE EMERGING PROJECTS

Solici - tation	Developer	Technology	Project Manager	Status	Reports
Completed Physical/Chemical Projects					
E06	Arizona State University Gregory Raupp 602-965-2828	Integration of Photocatalytic Oxidation with Air Stripping	Norma Lewis 513-569-7665	Work is completed.	Final report has been sent to NTIS. Project summary has been sent to printing. Report (EPA/540/R-98/504) Summary (EPA/540/SR-98/504)
E02	ART International (was Enviro-Sciences, Inc.) Denville NJ Warner Steiner 201-627-7601	Low-Energy Solvent Extraction for Organics	Jack Hubbard 513-569-7507	Project completed 1994.	A final report has been received.
E01	Atomic Energy of Canada, Chalk River, Ontario, Canada Leo Buckley 613-584-3311	Ultrafiltration of Metal/Chelate Complexes from Water	John Martin 513-569-7758	Project completed 1993.	Bulletin (EPA/540/F-92/002) Paper in HAZTECH International 89 Conference, 9/12-14/1989 Cincinnati, OH AECL-10030 @ Scientific Document Dist. Office, AECL, Chalk River, Ontario, Canada KOJJO
E06	Atomic Energy of Canada, Chalk River, Ontario, Canada L.A. Moschuk 613-584-3311 Extension 6057	Ultrasonic-Aided Leachate Treatment for Mixed Wastes	Randy Parker 513-569-7271	Project completed December 1996.	Three reports submitted to Hazardous Waste Journal for publication.. Final report available.
E01	Battelle Memorial Institute Columbus Div. Columbus OH Satya Chauhan 614-424-4812	In-situ Electroacoustic Decontamination of Oils, Organics and Metals from Soil	Randy Parker 513-569-7271	Project completed 1990.	Final Report (EPA/540/5-90/004 Available through NTIS) Summary (EPA/540/S5-90/004)
E03	Center for Hazardous Materials Research Pittsburgh PA Stephen Paff 412-826-5320	Acid Extraction of Organic Soils, Sludges and Ash	George Moore 513-569-7991	Project completed and closed out.	Report (EPA/540/R-94/513) Summary (EPA/540/SR-94/513)

STATUS OF SITE EMERGING PROJECTS

Solici- tation	Developer	Technology	Project Manager	Status	Reports
Completed Physical/Chemical Projects (continued)					
E05	Center for Hazardous Materials Research Pittsburgh PA Bruce King 412-826-5320	Simultaneous Destruction of Organics and Stabilization of Metals and Metal ions in Soils	Randy Parker 513-569-7271	Project completed September 1995.	Final report EPA 540/SR-98/500
E05*	COGNIS, Inc. Santa Rosa CA Dr. William Fristad 707-576-6235	COGNIS Lead Extraction Process	Mike Royer 732-321-6633	Project completed.	JAWMA article published, Vol. 46: pp 470 - 480, May 1996.
E04	Davy Research & Development Ltd., Cleveland, England George Rowden 011-441-642-602221	Resin In-Pulp & Carbon In-Pulp Decontamination of Soil	Vicente Gallardo 513-569-7176	Original Principal Investigators left company; Company no longer developing the technology.	Developer has exited Program.
E03*	Electrokinetics Inc. Baton Rouge LA Elif Acar 504-368-3992	Electrokinetic Soil Processing (EKSITE)	Randy Parker 513-569-7271	Project completed 1993. Moved into the demonstration program.	Bulletin (EPA/540/F-95/504) Final Report (EPA/600/R97/054) Article: Journal of Geotechnical Engineering March 1996, Pgs. 186-196 & 173-185.
E02	Electro-Pure Systems Inc. Amherst NY James LaDue 716-691-2610	A/C Electro-Coagulation Phase Separation and Removal	Randy Parker 513-569-7271	Project completed 1992, closed out.	Bulletin (EPA/540/F-92/011) Summary (EPA/540/S-93/504) Journal Article AWMA Vol. 43, 5/93, pp 784-89
E05	Energia, Inc. Princeton, NJ Dr. Moshe Lavid 609-799-7970	Reductive Photo-Dechlorination	Michelle Simon 513-569-7469 Fax 513-569-7676	Project completed 1995, closed out.	Final report October 1995. Bulletin (EPA/540/F-94/508)

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Solici - tation	Developer	Technology	Project Manager	Status	Reports
Completed Physical/Chemical Projects (continued)					
E01	Energy and Environmental Engineering, Inc. East Cambridge MA James Porter 617-666-5500	Laser-Stimulated Photochemical Oxidation of Water	Ronald Lewis 513-569-7856	Project completed 1993.	Report (EPA/540/R-92/080) PB93-131431 Bulletin (EPA/540/F-93/508) Summary (EPA/540/SR-92/080)
E03*	Florida International University Miami FL William Cooper 305-361-5508	High Energy Electron Irradiation for Destruction of Organics in Aqueous Solutions and Sludge	Franklin Alvarez 513-569-7631	Project was completed 1993 Accepted into demonstration program.	Final report was submitted. Bulletins: (EPA/540/F-93/502) (EPA/540/F-92/009) (EPA/540/F-93/509)
E06	High Voltage Environmental Miami, FL William Cooper 305-593-5330	Pilot-Scale Evaluation of Electron Beam Irradiation on Soil, Sediments, and Sludges	Mary Stinson 732-321-6683	Experimental work on PCB contaminated soil and on NY Harbor sediments with mixed contamination is completed.	Due to lack of reports, developer has been exited from the Program.
E07	Institute of Gas Technology Chicago, IL Dr. Michael Mensinger 708-768-0602	SELPPhOx Fluid Extraction/Oxidation Process for Organics	Valdis Kukainis 513-569-7955	Project completed.	Final report received.
E07	IT Corporation Cincinnati, OH Curtis Kellogg 513-782-4700	Chelation/Electro-deposition	George Moore 513-569-7991	Project has been completed and closed out.	Final report received.
E07	IT Corporation Knoxville TN Ed Alperin 615-690-3211	Treatment of Mixed Waste Contaminated Soils	Douglas Grosse 513-569-7844	Pilot-scale thermal desorption was completed in February 1995. Physical separation and chelant extraction was completed in 1995.	Paper presented AWMA June 1995.
E02	IT Corporation Knoxville TN Rich Miller 615-690-3211	Batch Stream Distillation; Extraction of Organics and Heavy Metals	Ronald Lewis 513-569-7856	Project completed 1992.	Bulletin (EPA/540/F-95/509)

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Solici- tation	Developer	Technology	Project Manager	Status	Reports
Completed Physical/Chemical Projects (continued)					
E03	IT Corporation Knoxville TN Robert D. Fox 615-690-3211	Treatment of Soil Organics with UV Photolysis and Biodegradation	Randy Parker 513-569-7271	Project completed 1993.	Report PB95-159992 Bulletin (EPA/540/F-94/502) Summary (EPA/540/SR-94/531)
E08	KSE, Inc. Amherst, MA Dr. J.R. Kittrell 413-549-5506	Air II Photocatalytic VOC Destruction for AirStreams	Vicente Gallardo 513-569-7176	Development continues. 2nd field test (is ongoing at the Stramina Mills Superfund site in Rhode Island.)	Project completed 1999.
E04*	Matrix Photocatalytic Ltd. (formerly Nutech Environmental) London, Ontario, Canada Bob Henderson 519-660-9349	Technology for Destruction of Organics & Inorganics in Aqueous Phase Systems	John Ireland 513-569-7413	Project completed 1993. Invited into demonstration program.	Peer-reviewed journal articles have been published. (EPA/540/A-93/282) and (EPA/540/J-93/297)
E05*	Matrix Photocatalytic Ltd. (formerly Nutech Environmental) London, Ontario, Canada Bob Henderson 519-660-8525	TiO2 Photocatalytic Oxidation of Organics in Air Streams	John Ireland 513-569-7413	Project was completed 1993. Invited into demonstration program.	Peer-reviewed journal article was published in lieu of final report.
E07	Membran Corp. Minneapolis MN Charles Gentzer 612-378-2160	Membrane Gas Transfer	Paul dePercin 513-569-7797	Project discontinued.	
E02	Membrane Technology and Research, Inc. Menlo Park CA Tessa Ennals 650-328-2228	Membrane Process for Removal of Organics from Air	Paul de Percin 513-569-7797	Project completed 1991.	Bulletin (EPA/540/F-94/503)

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Solici- tation	Developer	Technology	Project Manager	Status	Reports
Completed Physical/Chemical Projects (continued)					
E06	NRT/General Atomics San Diego, CA Anthony Gattuso 619-455-2910	Acoustic Barrier Particulate Separator	Ron Lewis 513-569-7856	Project Summary being considered.	
E03	New Jersey Institute of Technology Newark NJ Itzhak Gotlieb 201-596-5862	Decontamina- tion of Soil and Water by Reversible Adsorption on Surface-Active Compounds	Valdis Kukainis 513-569-7955	Project completed 1992.	Bulletin (EPA/540/F-94/508)
E04	Pulse Sciences San Leandro CA Vernon Bailey 510-632-5100	X-Ray Treatment for VOCs and SVOCs for liquids	Vicente Gallardo 513-569-7176	Project completed 1994.	Project Summary has been revised by Project Manager. Second draft in progress. Journal article is being prepared and will be submitted in lieu of a final report.
E04*	PURUS Inc. San Jose CA No known contact	Ultraviolet Flashlamps for Destruction of VOC in Air Phase	Norma Lewis 513-569-7665	Project completed 1992.	Report (EPA/540/R-93/516) Bulletin (EPA/540/R-93/501) Summary (EPA/540/SR-93/516)
E06*	Roy F. Weston Chester, PA Joe Martino 610-701-6174	Regenerable Adsorption System for VOC Contaminated Ground Water	Randy Parker 513-569-7271	Project completed.	Bulletin (EPA/540/F-95/500) Summary (EPA/540/SR-95/516)
E06	State University of New York (SUNY) at Oswego, NY Ron Scudato 315-341-3639	Photocatalytic Degradation of PCB- Contaminated Sediments	Randy Parker 513-569-7271	Project completed.	Final report received and is under review.
E06	Titan/Pulse Science San Leandro, CA Vernon Bailey 510-632-5100	X-Ray Treatment for VOCs and SVOCs in Solids	George Moore 513-569-7991	Final report under review.	

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Completed Physical/Chemical Projects (continued)					
E07	University of Houston, Houston, TX Dennis Clifford 713-743-4266	Concentrated Chloride Extraction and Recovery of Lead from Soil	Terry Lyons 513-569-7589	Final report received and in clearance process.	
E02	University of Washington Seattle WA Mark Benjamin 206-543-7645	Adsorptive Filtration of Inorganics from Liquids	Norma Lewis 513-569-7665	Project completed 1992	Report (EPA/540/R-93/515) Bulletin (EPA/540/F-92/008) Summary (EPA/540/SR-93/515)
E08	University of Wisconsin Madison, WI Dr. Marc Anderson 608-262-2674	Photo-electrocatalytic Degradation and Removal of Organic and Inorganic Contaminants from Ground Waters	Vicente Gallardo 513-569-7176	Journal articles submitted for publication.	Project summary and journal articles received this quarter.
E02*	Wastewater Technical Centre Burlington Ontario, Canada (Zenon Environmental) Chris Lipski 905-639-6320	Cross-Flow Pervaporation System for Removal of VOCs from Aqueous Wastes	John Martin 513-569-7758	Project completed 1992. Technology has been demonstrated under the name of Zenon.	Report (EPA/540/R-94/512) PB94-170230 Bulletin (EPA/540/F-93/503) Summary (EPA/540/SR-94/512)
E01	Western Research Institute Laramie WY Lyle Johnson 307-721-2011	Contained Recovery of Oil Wastes	Richard Eilers 513-569-7809	Project completed 1991. Developer completed demonstration program.	Final report and summary are complete.
Completed Stabilization/Solidification Projects					
E03	Ferro Corp. Cleveland, OH Emilio Spinosa 216-641-8585 Ext. 6657	Vitrification of Solids and Sludges	Randy Parker 513-569-7271	Project completed 1993.	Bulletin (EPA/540/F-95/503)
E04	Western Product Recovery Group, Inc. Houston, TX Donald H. Kelly 713-493-9321	Process for Sludge and Soils Contaminated with Organics and Heavy Metals	Vicente Gallardo 513-569-7176	All testing has been completed. Developer has mounted system on a trailer for future demonstrations.	Developer is working on final report, summary and journal article.

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Completed Thermal Projects					
E02*	Babcock & Wilcox Co. Alliance OH D.K. Haidet 216-821-9110	Cyclone Furnace	Laurel Staley 513-569-7863	Project completed 1992. In demonstration program.	Report (EPA/540/R-93/507 Sent to NTIS) Bulletin (EPA/540/F-92/010) Summary (EPA/540/SR-93/507)
E04	Center for Hazardous Materials Research Pittsburgh PA Roger Price 412-826-5320	Secondary Lead Smelters for Recovery of Lead from Waste Lead- Acid Battery Castings	Laurel Staley 513-569-7863	Project completed 1993.	Report (EPA/540/R-95/504) Bulletin (EPA/540/F-94/510) Summary (EPA/540/SR-95/504)
E06	Energy and Evnironmental Research Corp. Irvine CA Jerald Cole 714-859-8851	Reactor Filter System	Steve Rock 513-569-7149	Project complete.	Final report received.
E03	Energy and Environmental Research Corp. Irvine CA Richard Kappang 714-859-8851	Spouted Bed Incineration with Metals Fixation	Teri Richardson 513-569-7949	Project completed 1992.	Final report was received. Bulletin (EPA/540/F-93/508) Project closed.
E03	Institute of Gas Technology Chicago IL Michael Mensingher 312-949-3900	Two-Stage Fluidized Bed/Cyclonic Agglomerating Incinerator	Teri Richardson 513-569-7949	All tests have been completed.	Final report was received.
E04	PSI Technology Company Andover MA Steve Johnson 508-689-0003	MIDAS for Solids Contaminated with Organics and Metals	Mark Meckes 513-569-7348	Project completed 1993.	Final report was received.
E03	Svedala Industries, Inc., (formerly Allis Mineral Systems) Waukesha WI Bob Faulknet 414-762-1190	Thermal Encapsulation & Stabilization of Metals in Soils	Marta Richards 513-569-7692	Project completed 1993.	Final report journal article published in JAWMA, 45, July 1995, p514-520.

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Solici - tation	Developer	Technology	Project Manager	Status	Reports
Completed Thermal Projects (continued)					
E05	University of Dayton Dayton OH John C. Graham 513-229-2846	Development of a Photothermal Detoxification Unit	Annette Gatchett 513-569-7697	The results have been presented at AFRC, RREL, ACS, ET, and AOP symposiums.	Report (EPA/540/R-95/526) Bulletin (EPA/540/F-95/505) Summary (EPA/540/SR-95/526) Journal Article, Waste Management 15 (2), pages 159-170, 1995. Paper published in book entitled, "Environmental Applications of Advanced Oxidation Technologies", pages 9-19 - 9-25, September, 1997.
E04*	Vortec Corp. Collegeville PA James Hnat 215-489-2255	Vitrification Technology for Waste Treatment Processes	Teri Richardson 513-569-7271	Project Completed 1993. Invited to participate in the demonstration program.	Journal article & project summary have been published.